



Hair Diseases and Hair Loss

Hair grows from hair follicles located in the layer of skin called dermis, lying immediately below the surface layer. The dermis all over the body contains hair follicles except for lips, palms of hands, and soles of feet. Hair color originates from a pigment called melanin, which also gives skin its color. Hair grows in cycles of growth consisting of a long growing phase followed by a short resting phase. Human hair growth is regulated by hormones like testosterone and dihydrotestosterone, which are present in both the sexes. These hormones influence hair growth in the underarms and pubic area. Beard hair grows due to stimulation from dihydrotestosterone. Hair disorders include hair loss, excessive hairiness (hirsutism), and ingrown beard hair. These disorders may be caused by physical causes or abnormal hormone secretion. Hair diseases may not be life threatening, but may be a cosmetics issue. Some common diseases are below:

Alopecia Areata. This autoimmune disease results in patches of hair loss over the head. These patches may remain for years or may go away. This disease is caused when the immune system attacks hair follicles causing hair loss.

Folliculitis. Folliculitis is a bacterial infection of hair follicles caused by *Staphylococcus aureus*. Follicles may

swell into a red bumps or pimples. The infection may also spread causing swelling, redness, pain, severe tenderness, and production of pus from the infected site.

Hirsutism. Hirsutism is abnormal hair growth in women, particularly in the face, chest, and areolae. Hirsutism is caused by excessive levels of the hormone androgen and/or high sensitivity of hair follicles to androgen. This disorder may be caused by abnormalities in adrenal glands or ovaries.

Keratosis Pilaris. Keratosis pilaris is caused when skin cells—that usually flake off—plug hair follicles causing small painless pimples. Keratosis pilaris is common in teenagers on the upper arms, and babies on their cheeks. There is no tested treatment for keratosis pilaris, which worsens during winter months and humid days, but generally disappears before age 30.

Poliosis. Poliosis is abnormal whitening of hair in small patches that can occur anywhere on the body; on the forehead, it is called a white forelock. Poliosis occurs when hair coloring pigment melanin runs out causing hair discoloration. Poliosis also occurs due to genetic diseases like piebaldism. Most poliosis cases occur in otherwise healthy individuals.

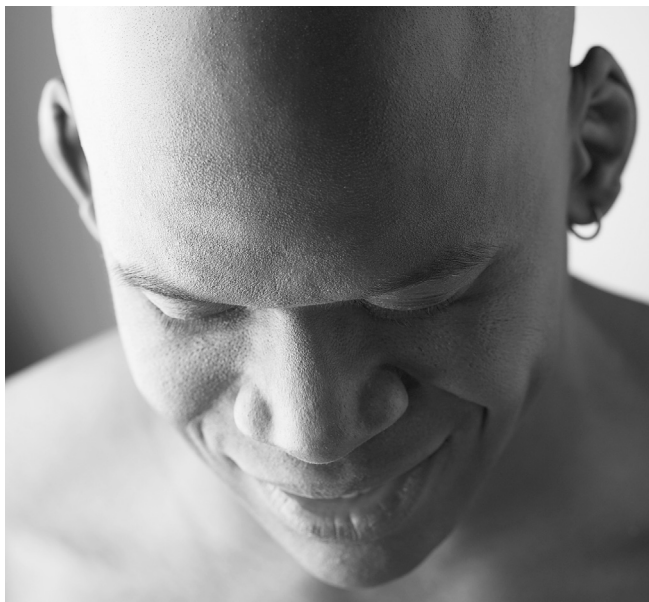
Hair loss. Hair loss is the gradual loss of hair with age seen in both the sexes, but more commonly in men. Hair loss may be caused by diseases, improper hair care, and genetics. Improper treatment of hair with

chemicals like dyes, tints, straighteners, bleaches, and permanent waves can cause hair loss if these chemicals are used improperly or excessively. Other causes include shampooing, combing or brushing more often than necessary, and vigorously rubbing wet hair with a towel. The most common cause of hair loss is by genetics—a condition called androgenetic alopecia—resulting in hereditary balding or thinning of hair. Hereditary balding is most obvious around the temples and crown in men, and on top of the head in women. Androgenetic alopecia may be treated with minoxidil-containing products which cause vasodilatation in hair follicles promoting hair growth.

SEE ALSO: Hair Dye; Head Lice; Hormone Replacement Therapy; Hormones.

BIBLIOGRAPHY. Rodney Dawber, *Diseases of the Hair and Scalp* (Blackwell Publishing, 1997); Benjamin Godfrey, *Diseases of Hair* (Churchill, 1872); Jerry Shapiro, *Hair Loss: Principles of Diagnosis and Management of Alopecia* (Taylor & Francis, 2002); Leonard Sperling, *An Atlas of Hair Pathology with Clinical Correlations* (Taylor & Francis, 2003).

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Hair loss is the gradual loss of hair with age; it is seen in both the sexes, but is more common in men.

Hair Dye

Hair coloring products include a wide range of over 5,000 chemical substances, some of which have been reported to be mutagenic and carcinogenic to animals. Hair dye products may be divided into three categories, that is, permanent, semipermanent, and temporary hair colors. Permanent hair colors are the most popular hair dye products. They may be further divided into oxidation hair dyes and progressive hair dyes. Oxidation hair dye products consist of 1.) a solution of dye intermediates, which form hair dyes on chemical reaction, and preformed dyes, which already are dyes and are added to achieve the intended shades, in an aqueous, ammoniacal vehicle containing soap, detergents, and conditioning agents; and 2.) a solution of hydrogen peroxide, usually 6 percent in water.

The prevalence of use of hair dyes is high among women in industrialized countries with more than half of women above age 18 applying hair dyes in Europe and the United States and around 10 percent among males. Consumers use all major types of hair colorants, which may contain aromatic amines, nitro-substituted aromatic amines, high molecular weight complexes, metal salts, and other. The content of hair dye has changed over the years and recent legislation prevents the use of carcinogenic substances in hair dye use.

Some components of hair dyes may cause skin irritation on certain individuals and a preliminary test according to accompanying directions should first be made as it is generally advised by the manufacturers. A major concern on the health effects of hair dyes is, however, the suspicion that they may be linked to cancer. While no clear excess risk of cancer has been observed among hairdressers and barbers, the evaluation of cancer risk among regular users of hair dyes has been poorly evaluated due to lack of adequate data on humans. In 1992, the International Agency for Research on Cancer evaluated hairdressing and barbering as occupations entailing exposures that are probably carcinogenic to humans; personal use of hair colorants could not at that time be evaluated in terms of its carcinogenicity.

Since this last evaluation, several studies have tried to provide human data on regular use of hair dyes. Among the cancer sites that have been most commonly evaluated in association with regular exposure to hair dyes are bladder cancer and lymphomas. Small amounts of